

## Salon E

## Salons A/B

IME2 • 5:00 p.m.

Invited

**Rethinking Photonics Design and Manufacture: Offshoring, Material Platforms and the Future of Integration**, *Erica Fuchs*; *Carnegie Mellon Univ., USA*. No abstract available.

IME3 • 5:30 p.m.

**High Efficiency SOI Fiber-to-Waveguide Grating Couplers Fabricated Using CMOS Technology**, *Gunther Roelkens<sup>1</sup>, Diedrik Vermeulen<sup>1</sup>, Dries Van Thourhout<sup>1</sup>, Roel Baets<sup>1</sup>, Stephane Brision<sup>2</sup>, Philippe Lyan<sup>2</sup>, Pauline Gautier<sup>2</sup>, Jean-Marc Fedeli<sup>2</sup>*; <sup>1</sup>*Ghent Univ., Belgium*, <sup>2</sup>*CEA/LETI-MINATEC, France*. -2.6dB coupling efficiency between a silicon-on-insulator waveguide circuit and a single mode optical fiber was obtained, based on a grating coupling structure fabricated in a CMOS line. The -1dB optical bandwidth is 50nm.

IME4 • 5:45 p.m.

**Implementation of Silicon Microphotonic Devices in a Geographically-Distributed Fiber Optic Network**, *J. T. Robinson<sup>1</sup>, J. D. Marconi<sup>2</sup>, N. Sherwood-Droz<sup>1</sup>, A. Cerqueira, Jr.<sup>2</sup>, Hugo H. Figueroa<sup>2</sup>, H. L. Fragnito<sup>2</sup>, Michal Lipson<sup>1</sup>*; <sup>1</sup>*Electrical and Computer Engineering Dept., Cornell Univ., USA*, <sup>2</sup>*Optics and Photonics Res. Ctr., Unicamp, IFGW, Brazil*. We experimentally investigate the performance of silicon microphotonic devices for filtering 10Gb/s data sent through a 40km fiber path from a real geographically-distributed fiber optic network.

IME5 • 6:00 p.m.

**Wide Temperature Range Operation of Resonant Silicon Electro-Optic Modulators**, *Sasikanth Manipatruni, Rajeev Dokania, Bradley Schmidt, Jagat Shakya, Alyssa Apsel, Michal Lipson*; *Cornell Univ., USA*. We demonstrate wide-temperature range operation of a micron-size high-speed silicon electrooptic modulator over a temperature range of 15 K. We show that modulation can be maintained by varying the bias current to counter temperature changes.

*Fraunhofer Inst. für Angewandte Optik und Feinmechanik, Germany*. The optical performance of organic LED can be optimized by using diffractive and/or refractive structures. Simulation of such complex systems requires mixed modeling of the emission from thin film stacks, diffractive, and refractive elements.

IMF3 • 5:15 p.m.

**Analyzing Second Harmonic Generation in Photonic Crystals by Dirichlet-to-Neumann Maps**, *Lijun Yuan, Ya Yan Lu*; *City Univ. of Hong Kong, Hong Kong*. A numerical method is developed for analyzing second harmonic generation in 2-D photonic crystals. The method makes use of the DtN maps of the unit cells to significantly reduce the total number of unknowns.

IMF4 • 5:30 p.m.

**Construction of Band Edge Diagrams for 2-D Photonic Crystals with Arbitrary 3-D Anisotropy by the Finite Element Method**, *Sen-ming Hsu, Hung-chun Chang*; *Natl. Taiwan Univ., Taiwan*. A full-vectorial finite element method based eigenvalue algorithm is developed for the band structure analysis of two-dimensional photonic crystals with arbitrary three-dimensional anisotropy under the out-of-plane wave propagation. The band edge diagram is then constructed.

IMF5 • 5:45 p.m.

Invited

**Flexible Modelling Approaches for Nanophotonics**, *Phillip Sewell, Trevor M. Benson, Ana Vukovic*; *Univ. of Nottingham, UK*. We discuss challenges facing designers of photonics-simulation software. Flexibility, accuracy and scale are still the principal drivers for research. We consider the role of numerical schemes today and in the context of future generalized optimizations.

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**Presentation Time Start:** 7/14/2008 5:30:00 PM

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**Presentation Time End:** 7/14/2008 5:45:00 PM

**Time End:**

**Author Block:** Gunther Roelkens<sup>1</sup>, Diedrik Vermeulen<sup>1</sup>, Dries Van Thourhout<sup>1</sup>, Roel Baets<sup>1</sup>, Stephane Brision<sup>2</sup>, Philippe Lyan<sup>2</sup>, Pauline Gautier<sup>2</sup>, Jean-Marc Fedeli<sup>2</sup>; <sup>1</sup>Ghent Univ., Belgium, <sup>2</sup>CEA/LETI-MINATEC, France.

**Presentation Number:** IME3

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